Docket No. 03-0593
Staff Ex. 3.0

DIRECT TESTIMONY

OF

RUSSELL W. MURRAY

TELECOMMUNICATIONS DIVISION

ILLINOIS COMMERCE COMMISSION

ICC ON ITS OWN MOTION

IMPLEMENTATION OF THE FEDERAL COMMUNICATIONS COMMISSION'S TRIENNIAL REVIEW ORDER ("TRO") WITH RESPECT TO A BATCH HOT CUT MIGRATION PROCESS

DOCKET NO. 03-0593

JANUARY 30, 2004

Q. Please state your name and business address.

A. My name is Russell W. Murray and my business address is 527 East Capitol Avenue, Springfield, Illinois 62794-9280.

Q. By whom are you employed and in what capacity?

A. I am employed by the Illinois Commerce Commission as a Utility Analyst in the Telecommunications Division.

Q. Please describe your professional background.

A. I am retired from GTE/Verizon after 30 years of service. I began my career with GTE of Illinois in 1970 as a Central Office Equipment Installer in Belvidere, Illinois. As an Equipment Installer, I installed Electrical Mechanical switching equipment, Special Service Equipment and Transmission Equipment in GTE Central Offices in Northern Illinois. In 1976, I became a Switching Technician in New Milford, Illinois. In that capacity, I conducted routine maintenance and repair of Electrical Mechanical and the newer #2EAX electronic switches, as well as maintenance and repair of various PABX switching equipment. I also worked on customer related trouble. In 1984, I transferred from Belvidere, Illinois to Bloomington, Illinois to work in the Switching Services Operations Center (SSOC). There I provided technical support to the local Switching Technicians who worked on the #2EAX and GTD5 electronic switches. I also assisted the local technicians in performing the software upgrades called System Version Releases (SVRs). The SSOC not only provided first line support but also was

the alarm monitoring center as well as call out center for Illinois during off hours. SSOC personnel, of which I was one, were on call seven days per week, twenty four hours per day.

In 1987, I become an Instructor for GTE North, located in Bloomington, Illinois. In that capacity, I instructed Management and Craft personnel on various technical and operational characteristics of the GTD5 electronic switch. In 1990, I returned to the Technical Support group. Again, I was responsible for providing technical support not only to the Local Technicians but also to the group's own Support Technicians. I also provided technical support and undertook Test Engineering functions for the GTE's Equipment Installation group. In addition, I was responsible for undertaking office conversions on several 5ESS switches throughout Illinois. I helped develop and train the Local Technicians on ADSL Testing in GTE North and provided technical support for the ATM network. Further, I have worked on Local Number Portability (LNP) and helped to develop the Fiber Restoration Procedures for GTE North.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to discuss the following issues:

I. Mechanized Main Distribution Frames (MDF).

II. Electronic Loop Provisioning (ELP)

III. Main Distribution Frame (MDF) / Intermediate Distribution Frame (IDF)

IV. Local Number Portability (LNP)

V. Integrated Digital Loop Carrier (IDLC)

I. Mechanized Main Distribution Frames (MDF)

Q. To your knowledge which parties have filed testimony relating to the issue of Mechanization of Hot Cuts?

A. Sherry Lichtenberg and Michael Starkey of WorldCom, Inc. d/b/a MCI, Mark David Van De Water of AT&T, and Dan Archer of SBC Illinois have all filed testimony about Mechanized of Hot Cuts.

Q. How do Sherry Lichtenberg and Michael Starkey define Mechanization?

A. They define Mechanization "as a concerted effort to minimize human intervention in the hot cut process for the purpose of increasing reliability and scalability and decreasing provisioning intervals (as well as to reduce resultant costs)".[1]

Q. Please summarize MCI's concerns regarding Mechanized Hot Cuts.

[1] WorldCom, Inc. d/b/a MCI, Sherry Lichtenberg and Michael Starkey, page 14, line 402.

A. Sherry Lichtenberg and Michael Starkey state "[I]n an effort to improve upon the existing process, the Commission's chief objective in this case should be to encourage a hot cut process that removes, to the utmost extent possible, manual intervention".[2] They describe the current hot cut process employed by SBC Illinois as, "A technician [who] responds to a work order and manually locates the loop, pre-wires the loop and on the day of the cut performs the 'lift and lay' necessary to connect the loop to the CLEC's switch, all while coordinating by telephone or some device with SBC service personnel and the CLEC (generally via a three-way conference call in the case of a coordinated cut)."[3]

Q. Please describe Mr. Archer's comments about Mechanized MDFs?

A. Mr. Archer states that mechanized frames have a capacity limit of about 5000 lines. Mr. Archer, consequently, believes that mechanized frames are only viable for smaller central offices and cannot be used in larger offices. [4]

Q. Do you agree with Mr. Archer's testimony based upon your knowledge of Mechanized main distribution frames ("MDFs")?

A. No, not exactly. Mr. Archer may be correct depending upon what equipment manufacturer he was relying upon. Some equipment manufacturers may have limitations of up to roughly 5,000 lines. There are some manufacturers, however,

[2] Id., page 4, line 87.
[3] Id., page 16-17, line 471.
[4] SBC Illinois Ex. 6.0, Dan Archer, page 5, line106

whose equipment may allow a carrier to expand capacity, which could allow the mechanical MDFs to be used in central offices of up to 50,000 lines.

Q. Where did you get your information from?

A. While researching this issue, I found a website for a company known as NHC Communications USA, Inc., which manufactures and sells mechanized frames. Their product is called ControlPoint Connection Management System (CMS) and information for this product is available at web site www.nhc.com. Based upon information contained on this website, NHC has several different models each model is capable of handling a different quantity of lines. The model CP5400 is the largest model, it is capable of handling up to about 5,000 lines. They also provide a solution for larger central offices, under which "it would be necessary to partition the MDF into "zones" so that service access ports are available to any subscriber loop that is terminated onto any ControlPoint switch"[5]. By partitioning the MDF into "zones," you can create three zones of approximately 16,000 lines per zone. The main problem, however, is how to allocate subscribers and services to each MDF so that most cross-connections can be handled within a given zone. This should be determined by gathering data about what the service profile is for each segment of the MDF. This service profile information helps to determine how many service ports of each service class to allocate to each CP5400.[6] The CP5400 will accommodate approximately 5,000 lines, and per

[5] www.nhc.com; NHC White Paper on MDF Management, page 8.
[6] Id.,at 9.

NHC's technical information, these units can be cascaded together to increase their capability.[7]

Q. Does Mr. Archer draw further conclusions concerning customer out of service time with a service order change using the mechanized frames?

A. Yes. Mr. Archer also concludes, "Moreover, the time a customer may be out of service during a hot cut performed by the mechanized frame is comparable to the time under current manual hot cut process"[8]

Q. Do you agree with Mr. Archer?

A. Not necessarily. Although I personally have never seen any of these types of mechanized frames, based on the information available at the NHC's web site, my understanding is that there will be no out of service issues when customers move from one LEC to another LEC. It should be kept in mind that each manufacturer's equipment works differently, without having actual experience; I am not able to determine whether or not Mr. Archer is correct.

Q. What are your recommendations for Mechanized MDFs?

A, We are dealing with a short time frame in this proceeding, therefore I recommend that the Commission should properly investigate the feasibility of Mechanized MDFs in another proceeding after it has approved a batch cut process in this nine month proceeding. With that said, however, I also recommend that the

[7] Id.

Commission require SBC Illinois to disclose whether of not they have investigated the use of Mechanized MDFs in offices of 50,000 lines. And, if so, then I further recommend that the Commission require SBC Illinois to provide in detail their findings. If SBC Illinois has not investigated the used of Mechanized MDFs, I further recommend that the Commission require SBC Illinois to explain in detail as to why it has not done so.

II. Electronic Loop Provisioning (ELP)

Q. Have any parties brought up the issue of Electronic Loop Provisioning (ELP)?

A. Yes, AT&T witness Mark David Van De Water.

Q. What does AT&T witness Mark David Van De Water have to say about Electronic Loop Provisioning?

A. AT&T witness Mark David Van De Water states, "The concept of mechanized loop provisioning has sometime been referred to as ELP, or Electronic Loop Provisioning. If it wishes to remove the impairment associated with hot cuts, the Commission should cause SBC to pursue network upgrades by which it could provision loops on a mechanized basis".[9] Mr. Van De Water emphasizes,

[8] SBC Illinois Ex. 6.0, Dan Archer, page 6, line118.
[9] AT&T Ex. 1.0, Mark David Van De Water, page 24, line 16.

however, that "this case is not the forum for the Commission to investigate how the manual hot cut process could be eliminated".[10]

Q. How do you characterize your concerns of mechanized loop provisioning/Electronic Loop Provisioning?

A. The concept of mechanized loop provisioning is a subject that should be looked into at a future date. I agree that this is not the forum for the Commission to investigate how to eliminate the manual hot cut process. The issue appears to be quite complicated and is not suited for the short time frame for this proceeding. There is a footnote in the TRO that sums up the question of mechanized loop provisioning: "In theory, electronic loop provisioning might one day obviate the need for a hot cut when migrating a loop from one carrier's switch to another's. ... As discussed below, however, the record in the proceeding does not support a determination that electronic provisioning is currently feasible."[11] I agree with the FCC statement in the TRO that this concept of mechanized loop provisioning should be investigated, but at a future date. Much like my recommendation as to Mechanized MDFs, I recommend that the Commission require SBC Illinois to disclose whether of not they have investigated the use of Electronic Loop Provisioning in its central offices. And, if so, then I recommend that the Commission require SBC Illinois to provide

[10] Id., page 24, line 11.
[11] *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, and Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 01-338, 96-98 & 98-147, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, FCC 03-36 (rel. Aug. 21, 2003) ("Triennial Review Order" or "TRO"), at ¶ 487, n. 1517.

detailed findings to the Commission. If SBC Illinois has not investigated the used of Electronic Loop Provisioning, I recommend that the Commission require SBC Illinois to explain in detail as to why it has not done so.

III. Main Distribution Frame (MDF) / Intermediate Distribution Frame (IDF)

Q. Are there any witnesses that have provided testimony associated with the Main Distribution Frame (MDF) / Intermediate Distribution Frame (IDF)?

A. Yes, AT&T witness Mark David van De Water.

Q. What are AT&T's concerns?

A. AT&T witness Mark David van De Water states, "AT&T asked SBC to evaluate whether additional MDF and IDF capacity would be needed to accommodate BHC migrations. SBC's response was that it had sufficient capacity. However, SBC failed to provide empirical data to back up its claim. AT&T will continue to pursue this issue in this case."[12]

Q. What is you response to AT&T's concern?

A. I am not exactly certain what Mr. Van De Water's concern is regarding MDF/IDF capacity. In my past experiences in the telephone industry, I have never seen the situation where there was any MDF/IDF space exhaust. I would characterize

[12] AT&T Ex. 3.0, Mark David Van De Water, page 51, line 14.

the MDF/IDF as a very key component of any telephone office. Most companies can't afford to have that area become exhausted. When an MDF/IDF gets to a targeted capacity the companies have added to their MDF/IDF. I have little doubt that there are cases where these MDF/IDF additions have been located on other floors within their buildings. If there are any central offices where MDF/IDF exhaustion is a concern, Staff would like to know where these central offices are located.

IV. Local Number Portability (LNP)

Q. Has any party discussed Local Number Portability (LNP) issues?

A. Yes, AT&T.

Q. What were AT&T concerns with LNP?

A. AT&T witness Mark David van De Water states "Did AT&T make recommendations that SBC complete LNP transactions on behalf of CLECs, notifying them of the completion order including LNP activation via its EDI and LEX interfaces?"[13] "AT&T states that SBC has not provided AT&T a final response to this request."[14] "AT&T invites SBC to do so in its rebuttal testimony."[15]

[13] Id., page 50, line 12.
[14] Id., page 50, line 22.
[15] Id., page 50, line 13.

Q. Do you have any response to this LNP issue?

A. I will wait for the rebuttal phase to see how SBC responds to AT&T's request before addressing this issue.

V. Integrated Digital Loop Carrier (IDLC)

Q. What is an Intergrated Digital Loop Carrier or "IDLC"?

A. An Intergrated Digital Loop Carrier (IDLC) is a subscriber carrier that is directly interfaced into the switch. Unlike some Digital Loop Carriers the IDLC does not utilize a Central Office Terminal.

Q. Have any intervenors expressed an interest in having access to IDLCs?

A. Yes, AT&T, McLeodUSA, and Sage Telecom/Talk America have all expressed an intention to access IDLCs.

Q. Has any intervenor provided any information that shows IDLC access is technically feasible?

A. Sage Telecom/Talk America provided Exhibit 1.3 to the Direct Testimony of Lyndall Nipps that demonstrates that it may be technically feasible to access IDLCs.

Q. What is your position on IDLC access?

A. While Sage Telecom/Talk America's exhibit demonstrates that it may be technically feasible for CLECs to access the ILEC's IDLCs, but in light of the short time frame available and the complexity of this issue it would be beneficial to address this in a separate proceeding. Nonetheless, I may wish to revisit this issue following the filing of rebuttal testimony.

Q. Does this conclude your testimony?

A. Yes.